NASA'S MISSION TO PLANET EARTH

EARTH PROBES

DATA INFORMATION SYSTEM

EOS

EARTH OBSERVING SYSTEM

SDPS Planning

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Agenda

Overview of Planning Process

- **Release Planning**
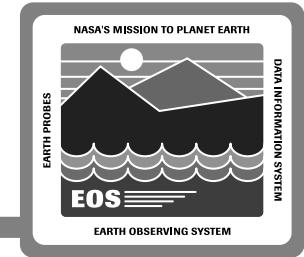- **Development Planning**
- **Thread/Build Methodology**

Release and Development Plan Overview

- **Capabilities per Release**
- **Development Plans**

Integration and Test (I&T) Plans

- **I&T Process**
- **Integration and Test Plan Overview**
  - **Release IR-1 Thread/Build Plan**
  - **Release A Thread/Build Plan**
 - **Sample Test Case**

Release Planning

Goals

- **Provide sufficient ECS functionality to satisfy the Mission Objectives for each Release**
- **Demonstrate significant progress towards the final ECS system**
- **Allow for evolution of ECS in future releases**
- **Ensure sufficient schedule slack to minimize program risks**
- **Minimize hardware cost by delaying procurement as long as possible**

Source Material

- **ECS Statement of Work (SOW)**
- **ECS Release Planning Technical Paper**
- **Requirements by Release**
- **Discussions with ESDIS, DAACs and Science Community**
- **SDPS Requirements and Design**

Development Planning
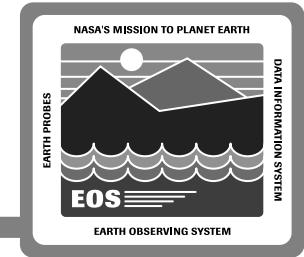
Design is a successive decompositioning of a system into finer components and the definition and allocation of requirements to those components.

- **Reuse of components is considered during design decomposition**

Development and integration planning is the process of scheduling component design, implementation, and integration into the ECS releases.

- **Size and composition of components are assessed to determine the resources and schedule required.**
- **Component are partitioned into COTS and SLOCs**
- **SLOCs are further divided into 3GL (C++, C, FORTRAN) and 4GL (GUIs, SQL, scripts)**
- **Reuse components are sheduled to meet the earliest dependency**

These two activities are conducted in parallel. As the design matures, planning increases in fidelity as well.

Thread/Build Methodology
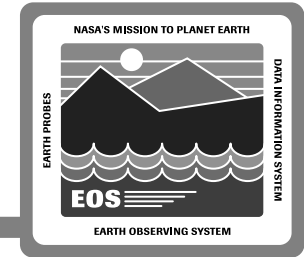
Incremental aggregation of "functions" to arrive at the SDPS deliverables (builds) to system test:

- Thread - software, data, hardware, and procedures that implement a function or set of related functions
- Build - an assemblage of threads that progressively lead to logical sets of segment capabilities

Thread/build testing enables the isolation of problems, early interface validation, and demonstration of incremental system capabilities.

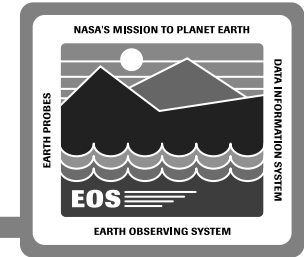Thread/build planning enables a time-phased approach to implementation, integration, and testing.

Thread/Build Methodology
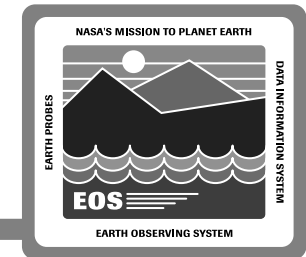
Component development and integration is scheduled to achieve an incremental buildup of segment functionality

CSCI Code & Unit Test

Thread Integration & Test

Build Integration & Test
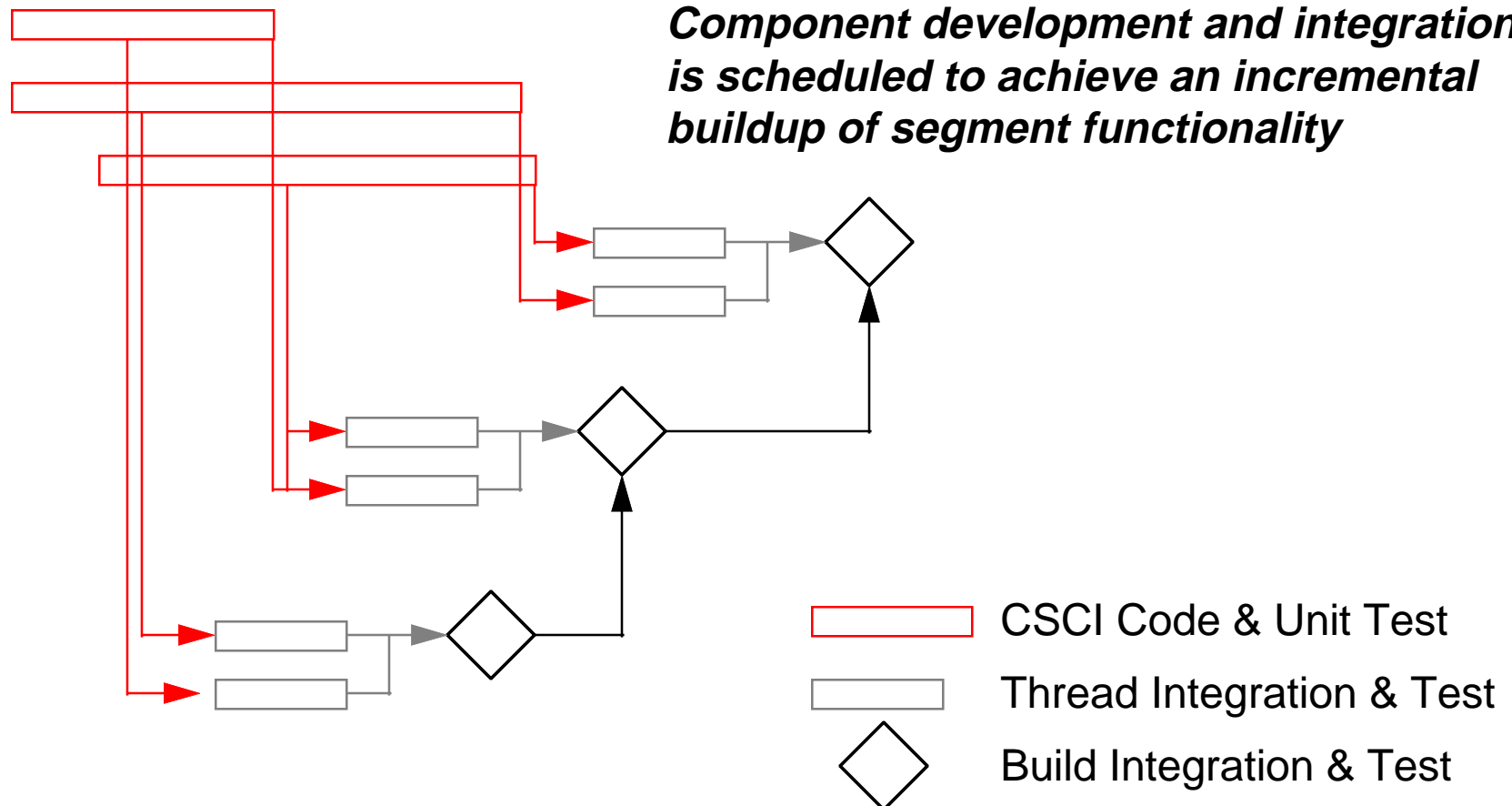
TRMM Infrastructure Release (IR-1)

TRMM Interface Testing Support

- **Connection authentication , message passing, data ingest, limited checking of messages and satisfactory data transfer (all files present)**
    - **Interfaces supported: SDPF (CERES and LIS L0), TSDIS (PR, TMI, GV and VIRS data), GDAO (NOAA), NESDIS (NOAA)**
- **Polling and DAS notification transfer initiation methods supported**

TRMM and EOS-AM-1 Algorithm Integration and Test (I&T) Support

- **DAAC version of SDP Toolkit**
- **Algorithm I&T Support Tools**
- **GUI supported PGE chaining, queuing, and execution (prototype)**

TRMM Release (Release A)
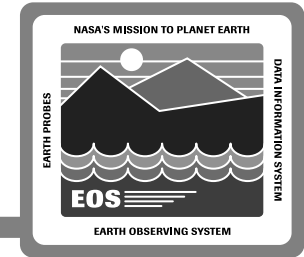
TRMM Support

- **TRMM Ancillary Ingest**
- **TRMM Standard Product Processing (CERES and LIS Products)**
- **TRMM Data Servers (including support for Guide & Directory Services)**
- **Data Dictionary and Advertising Services**
- **TRMM Data Search, Access, and Distribution**
- **Additional TRMM Algorithm I&T Support**

V0 Data Migration and Interoperability

- **Migration of selected V0 Data to ECS Servers**
- **Data Servers for Migrated V0 Data (including support for Guide & Directory)**
- **Search, Access, and Distribution for Migrated V0 Data**
- **Data Dictionary and Advertising Services**
- **Query and Distribution of V1 or V0 held data from either system**

TRMM Release (Release A)
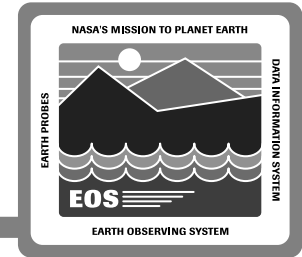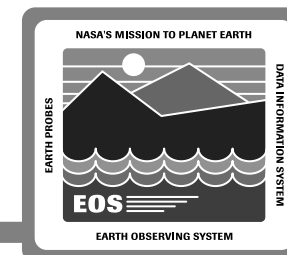
EOS-AM-1 Support

- **EOS-AM-1 Interface Testing Support**
    - EDOS/ECS (EOS-AM-1 Instrument Data)
    - ADCs (EOS-AM-1 Ancillary Data)
- **EOS-AM-1 Algorithm Integration and Test**

Landsat 7 Support

- **Landsat 7 Interface Testing Support**

SDPS SLOCs/Release

CI	IR-1	A	B	C/D
Desktop (DESKT)	0	2200	1000	0
Workbench (WKBCH)	0	7000	33000	0
Advertising Service (ADSRV)	0	11000	2000	1000
Local Information Manager (LIMGT)	0		12000	3000
Distributed Information Manager (DIMGT)	0	0	8700	3700
Data Dictionary (DDICT)	0	3350	0	1000
V0 Interoperability Gateway (GTWAY)	0	5250	0	0
Science Data Server (SDSRV)	0	33700	55500	11500
Document Data Server (DDSRV)	0	4000	1000	0
Storage Mgmt (STMGT)	0	11400	12500	3500
Data Distribution (DDIST)	0	8000	8000	4000
Ingest (INGST)	3000	19000	9000	1000
Production Planning (PLANG)	0	18000	8950	4830
Processing (PRONG)	0	17410	18800	16100
Science Data Pre-Processing (DPREP)	0	3000	0	0
Algorithm I&T (AITTL)	6900	6250	0	0
SDP Toolkit (SDPTK)	35580	0	0	0
PDR TOTALS:	45480	149560	170450	49630
SDR TOTALS:	69000	168000	151000	65000

Composition of SDPS "SLOCs" Release IR-1

IR-1   SLOC   Distribution

4GL - GUI
11%

3GL - C++
11%

3GL -
C/FORTRAN
78%
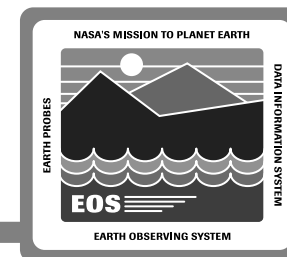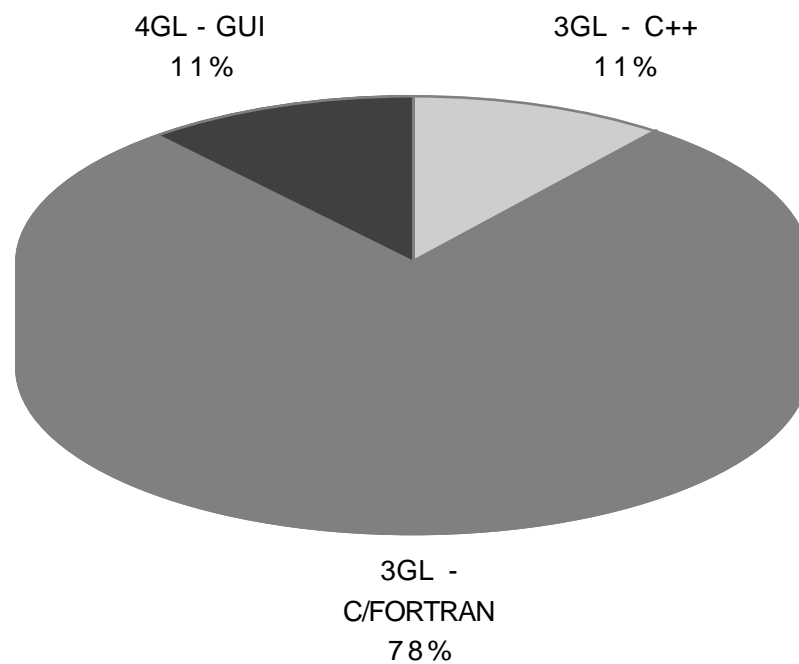
Composition of SDPS "SLOCs"
Release A

Release A SLOC Distribution

4GL - SQL &
Scripts
8%

4GL - GUI
15%

3GL - C++
77%